Managing behavioral academic self-esteem using FuzzyXteem

Abstract

Behavioral academic self-esteem (BASE) has been used with children of preschool, elementary, and junior high school classes, both individually and in groups. In this study, BASE is used to estimate the factor structures and determine the levels of academic self-esteem of the student. The current practice of the existing system using BASE scale may be scored by hand or by computer based on the rigid crisp values to represent rating number one through five. Since BASE requires the ability for estimating the factor structure and also the ability to explain how the conclusion is derived, therefore artificial intelligent techniques that are required to perform BASE must be able to perform estimation and provide reasoning. For this purpose, fuzzy logic and expert system have been integrated in a web-based environment to demonstrate the use of hybrid system on BASE factor structure and levels of academic self-esteem. For each BASE factor, the sub score is provided based on the classifications of academic self-esteem and their respective ranges. In FuzzyXteem, users in particular teachers, counselors, or parent are allowed to measure students' self-esteem at early age using real time computation. FuzzyXteem facilitates user by automatically evaluating BASE factors and helps the user diagnoses their students' levels of academic self-esteem in 3 ratings: low, moderate and high. It is also able to provide explanation and describe how the conclusion can be derived. The system has been successfully tested by the counselors and conforms to the BASE factor rating scale and sub-scores. FuzzyXteem can be used as an aid to decision making in improving a person's self esteem, and indirectly increases an Taniza Tajuddin, MSc; research fields: fuzzy logic, expert system, neural network, web based programming. Kamaruzaman Jusoff, Ph.D.; research field: forest engineering survey. Fadzilah Siraj, associate professor; research fields: neural network, case based reasoning, fuzzy logic, data mining and mobile computing. Khairul Adilah Ahmad, MSc; research fields: XML, data management. Samsiah Bidin, MSc; research fields: education and motivation, test. individual for productivity. The same system functions can be applied to business organization for managing and improving the organizations performance.

Keyword: Fuzzy expert; E-counselling; Hybrid intelligent systems; Behavioural academic self-esteem